

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
MARSHALL DIVISION**

CARDSOFT (ASSIGNMENT FOR THE  
BENEFIT OF CREDITORS), LLC

v.

FIRST DATA CORP., et al.

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Case No. 2:13-CV-290-JRG-RSP

**CLAIM CONSTRUCTION**  
**MEMORANDUM AND ORDER**

On June 10, 2014, the Court held a hearing to determine the proper construction of the disputed claim terms in United States Patents No. 6,934,945 and 7,302,683. After considering the arguments made by the parties at the hearing and in the parties' claim construction briefing (Dkt. Nos. 65, 70, and 74),<sup>1</sup> the Court issues this Claim Construction Memorandum and Order.

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<sup>1</sup> Citations to documents (such as the parties' briefs and exhibits) in this Claim Construction Memorandum and Order refer to the page numbers of the original documents rather than the page numbers assigned by the Court's electronic docket.

## Table of Contents

<b>BACKGROUND .....</b>	<b>3</b>
<b>LEGAL PRINCIPLES .....</b>	<b>4</b>
<b>THE PARTIES' STIPULATED TERMS.....</b>	<b>6</b>
<b>COLLATERAL ESTOPPEL.....</b>	<b>7</b>
<b>CONSTRUCTION OF DISPUTED TERMS.....</b>	<b>8</b>
A. "virtual machine means," "virtual function processor" and "virtual message processor" ...	9
B. "message instruction means" .....	17
C. "emulatable in different computers having incompatible hardwares or operating systems" .....	25
<b>CONCLUSION .....</b>	<b>29</b>
<b>APPENDIX A .....</b>	<b>30</b>

## **BACKGROUND**

Plaintiff brings suit alleging infringement of United States Patents No. 6,934,945 (“the ‘945 Patent”) and 7,302,683 (“the ‘683 Patent”) (collectively, the “patents-in-suit”). The patents-in-suit are both titled “Method and Apparatus for Controlling Communications,” and both bear a priority date in March 1997. The ‘945 Patent issued on August 23, 2005. The ‘683 Patent issued on November 27, 2007. The Abstract of the ‘945 Patent states:

The present invention relates to preparing and processing information to be communicated via a network or to or from other data carriers. For implementation of a novel “virtual machine” of the present invention, a minimal amount of hardware is required. Prior art virtual machines tend to slow down operation of the device as they interface between an application program and device drivers. The novel virtual machine incorporates a virtual message processing means that is arranged to construct, deconstruct and compare messages and [that is] applied in the native code of the processor. The message instruction means directs and controls the message processor. Similarly, a protocol processor means governs and organizes [*sic*, organizes] communications, under the direction of a protocol instruction means in the application. These elements of the novel virtual machine increase the speed and efficiency and allow implementation of a practical device for use in communications, able to be implemented on different hardware having different BIOS/OS.

The Abstract of the ‘683 Patent states:

Disclosed is a device arranged to process messages for communications, comprising a virtual machine means including a message processor means which is arranged to process messages communicated to and/or to be communicated from the device, and message processor instruction means, arranged to provide directions for operation of the message processor means. Also disclosed is a method for operating a device arranged to process messages for communications and a method of programming a device arranged to process messages for communications.

The ‘683 Patent is a continuation of the ‘945 Patent. Because the patents-in-suit therefore share a common written description and figures, for convenience this Claim Construction Memorandum and Order cites the specification of only the ‘945 Patent.

The Court has construed claims of the patents-in-suit in twice before. The Court first construed the claims in *CardSoft (Assignment for the Benefit of Creditors) LLC, et al. v. VeriFone Systems, Inc., et al.*, No. 2:08-CV-98, Dkt. No. 251 (E.D. Tex. Sept. 23, 2011) (Everingham, J.) (“*VeriFone*”). The *VeriFone* case proceeded to a trial on the merits and a jury verdict. *See* No. 2:08-CV-98, Dkt. No. 389, 6/8/2012 Verdict Form. The Court entered a Judgment on October 30, 2013. No. 2:08-CV-98, Dkt. No. 483.

The Court next construed claims of the patents-in-suit in *CardSoft (Assignment for the Benefit of Creditors), LLC v. The Gores Group, LLC, et al.*, No. 2:12-CV-325 (E.D. Tex. Nov. 27, 2013) (Payne, J.) (“*Gores*”). The *Gores* case ended in a settlement in February 2014. *See* No. 2:12-CV-325, Dkt. No. 140, 2/11/2014 Order of Dismissal with Prejudice.

### **LEGAL PRINCIPLES**

“It is a ‘bedrock principle’ of patent law that ‘the claims of a patent define the invention to which the patentee is entitled the right to exclude.’” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Innova/Pure Water Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). To determine the meaning of the claims, courts start by considering the intrinsic evidence. *See id.* at 1313; *see also C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 861 (Fed. Cir. 2004); *Bell Atl. Network Servs., Inc. v. Covad Commc’ns Group, Inc.*, 262 F.3d 1258, 1267 (Fed. Cir. 2001). The intrinsic evidence includes the claims themselves, the specification, and the prosecution history. *See Phillips*, 415 F.3d at 1314; *C.R. Bard*, 388 F.3d at 861. Courts give claim terms their ordinary and accustomed meaning as understood by one of ordinary skill in the art at the time of the invention in the context of the entire patent. *Phillips*, 415 F.3d at 1312-13; *accord Alloc, Inc. v. Int’l Trade Comm’n*, 342 F.3d 1361, 1368 (Fed. Cir. 2003).

The claims themselves provide substantial guidance in determining the meaning of particular claim terms. *Phillips*, 415 F.3d at 1314. First, a term's context in the asserted claim can be very instructive. *Id.* Other asserted or unasserted claims can aid in determining the claim's meaning because claim terms are typically used consistently throughout the patent. *Id.* Differences among the claim terms can also assist in understanding a term's meaning. *Id.* For example, when a dependent claim adds a limitation to an independent claim, it is presumed that the independent claim does not include the limitation. *Id.* at 1314-15.

“[C]laims ‘must be read in view of the specification, of which they are a part.’” *Id.* at 1315 (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc)). “[T]he specification ‘is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.’” *Phillips*, 415 F.3d at 1315 (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)); accord *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002). This is true because a patentee may define his own terms, give a claim term a different meaning than the term would otherwise possess, or disclaim or disavow claim scope. *Phillips*, 415 F.3d at 1316. In these situations, the inventor's lexicography governs. *Id.* The specification may also resolve the meaning of ambiguous claim terms “where the ordinary and accustomed meaning of the words used in the claims lack sufficient clarity to permit the scope of the claim to be ascertained from the words alone.” *Teleflex*, 299 F.3d at 1325. But, “[a]lthough the specification may aid the court in interpreting the meaning of disputed claim language, particular embodiments and examples appearing in the specification will not generally be read into the claims.” *Comark Commc'ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed. Cir. 1998)

(quoting *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1571 (Fed. Cir. 1988)); accord *Phillips*, 415 F.3d at 1323.

The prosecution history is another tool to supply the proper context for claim construction because a patent applicant may also define a term in prosecuting the patent. *Home Diagnostics, Inc., v. Lifescan, Inc.*, 381 F.3d 1352, 1356 (Fed. Cir. 2004) (“As in the case of the specification, a patent applicant may define a term in prosecuting a patent.”). “[T]he prosecution history (or file wrapper) limits the interpretation of claims so as to exclude any interpretation that may have been disclaimed or disavowed during prosecution in order to obtain claim allowance.” *Standard Oil Co. v. Am. Cyanamid Co.*, 774 F.2d 448, 452 (Fed. Cir. 1985).

Although extrinsic evidence can be useful, it is “less significant than the intrinsic record in determining the legally operative meaning of claim language.” *Phillips*, 415 F.3d at 1317 (citations and internal quotation marks omitted). Technical dictionaries and treatises may help a court understand the underlying technology and the manner in which one skilled in the art might use claim terms, but technical dictionaries and treatises may provide definitions that are too broad or may not be indicative of how the term is used in the patent. *Id.* at 1318. Similarly, expert testimony may aid a court in understanding the underlying technology and determining the particular meaning of a term in the pertinent field, but an expert’s conclusory, unsupported assertions as to a term’s definition are entirely unhelpful to a court. *Id.* Generally, extrinsic evidence is “less reliable than the patent and its prosecution history in determining how to read claim terms.” *Id.*

### **THE PARTIES’ STIPULATED TERMS**

The parties have reached agreement on a construction for one term, as stated in their March 18, 2014 Joint Claim Construction and Prehearing Statement (Dkt. No. 51 at 1-2) and

their May 27, 2014 Claim Construction Chart per Local Rule 4-5(d) (Dkt. No. 75, Ex. A at 3).

The parties' agreement is set forth in Appendix A to this Claim Construction Memorandum and Order.

### **COLLATERAL ESTOPPEL**

Plaintiff has asserted collateral estoppel based on the Court's construction of claims of the patents-in-suit in *VeriFone*. (See, e.g., Dkt. No. 65 at 1.)

Defendants respond that they were "not a party to the previous lawsuits," thus "barring any collateral estoppel effects in this case." (Dkt. No. 70 at 23.) Defendants also note that *Gores* settled before any final judgment and that *VeriFone* is currently on appeal. (*Id.*)

Plaintiff's reply brief does not address collateral estoppel. (See Dkt. No. 74.)

Collateral estoppel is not an issue unique to patent law, thus the law of the regional circuit applies. See *Applied Med. Res. Corp. v. U.S. Surgical Corp.*, 435 F.3d 1356, 1359-60 (Fed. Cir. 2006). "[C]ollateral estoppel is appropriate when: (1) the identical issue was previously adjudicated; (2) the issue was actually litigated; and (3) the previous determination was necessary to the decisions." *Pace v. Bogalusa City Sch. Bd.*, 403 F.3d 272, 290 (5th Cir. 2005).

*Clear With Computers, LLC v. Hyundai Motor Am., Inc.*, No. 6:09-CV-479, 2012 WL 8144915, at \*11 (E.D. Tex. Jan. 9, 2012) (Davis, J.) (finding failure to show that identical issue was previously litigated), *aff'd*, No. 2012-1291, 496 F. App'x 88 (Fed. Cir. Feb. 8, 2013); see *Pfaff v. Wells Elecs., Inc.*, 5 F.3d 514, 518 (Fed. Cir. 1993) ("[W]here a determination of the scope of patent claims was made in a prior case, and the determination was essential to the judgment there on the issue of infringement, there is collateral estoppel in a later case on the scope of such claims.") (citation and internal quotation marks omitted). The party asserting collateral estoppel bears the burden of proving its elements. See *Anderson, Clayton & Co. v. U.S.*, 562 F.2d 972, 992 (5th Cir. 1977).

Plaintiff has failed to meet its burden. In particular, Plaintiff has failed to establish privity between Defendants and any relevant party. *See Meza v. Gen. Battery Corp.*, 908 F.2d 1262, 1266 (5th Cir. 1990) (“[I]t is a fundamental principle of American jurisprudence that a person cannot be bound by a judgment in litigation to which he was not a party.”). Plaintiff’s collateral estoppel argument is therefore rejected.

### **CONSTRUCTION OF DISPUTED TERMS**

Plaintiff submits that it proposes the constructions that the Court reached in *VeriFone* and *Gores*. (Dkt. No. 65 at 11-12.)

Defendants respond that “[i]n the aggregate, the prior constructions eviscerate the purported advantages of the claimed technology and thus its novelty, and [Plaintiff] threaten[s] to recapture products requiring customized applications with no discernible virtual machine at all, the very problem that Ogilvy [(the named inventor)] sought to solve.” (Dkt. No. 70 at 1.) Defendants argue that Plaintiff will use its proposed constructions “to capture situations that still require significant customization. These would be situations where programmers essentially ‘write once, run once,’ iteratively, for each different hardware/OS [(operating system)] platform, rather than ‘write once and run anywhere,’ as a VM [(virtual machine)] allows.” (*Id.* at 3.)

Plaintiff replies that “Defendants try to argue the existence of a ‘universal portability’ limitation in the asserted claims, *i.e.* the requirement that once an application program is written and compiled for a particular device, every single ePOS [(electronic point of sale)] device in the world must be able to execute that same application without any modification whatsoever.” (Dkt. No. 74 at 1.)

The parties submit that each of the disputed terms appears in Claims 1, 12, and 14 of the ‘945 Patent and Claim 1 of the ‘683 Patent. (Dkt. No. 51, Ex. A at 1-6.)



**A. “virtual machine means,” “virtual function processor,” and “virtual message processor”**

<b>“virtual machine means”</b>	
<b>Plaintiff’s Proposed Construction</b>	<b>Defendants’ Proposed Construction</b>
“a computer programmed to emulate a hypothetical computer for applications relating to transport of data”	“a computer programmed to emulate a hypothetical computer running applications that are independent of the communication device hardware and operating system”
<b>“virtual function processor”</b>	
<b>Plaintiff’s Proposed Construction</b>	<b>Defendants’ Proposed Construction</b>
“software which controls and/or selects general operations of a communications device”	“software which controls and/or selects general operations of a communication device running applications that are independent of the communication device hardware and operating system”
<b>“virtual message processor”</b>	
<b>Plaintiff’s Proposed Construction</b>	<b>Defendants’ Proposed Construction</b>
“software implemented in the native code of the communications device that processes messages, including assembling, disassembling and/or comparing messages, for communication to and/or from a communications device”	“software implemented in the native code of the communications device that processes messages, including assembling, disassembling and comparing messages, for communication to and/or from the communications device running applications that are independent of the communication device hardware and operating system”

(Dkt. No. 65 at 7, 8 & 9; Dkt. No. 70 at 12.)

(1) The Parties' Positions

Plaintiff proposes the constructions that the Court reached in *VeriFone* and *Gores*.<sup>2</sup> (*See* Dkt. No. 65 at 7-10.) Plaintiff argues that the specification expressly defines “virtual machine means,” and Plaintiff submits that in *VeriFone* and *Gores* the Court rejected the limitation that Defendants here propose. (*Id.* at 7.) Plaintiff argues that its proposed construction should be adopted for the reasons set forth by the Court in *VeriFone*. (*Id.* at 8.) Plaintiff also argues that “[t]here simply is no[] requirement anywhere in the common specification of the patents-in-suit that requires the virtual function processor to run any particular applications or other programs (regardless of whether they are independent of the underlying hardware and operating system).” *Id.* at 9. Plaintiff further argues that “there is not one single iota of intrinsic evidence that even suggests that the ‘virtual message processor’ must be so limited (*i.e.* to only run applications that are independent of the communication device hardware and operating system).” (*Id.* at 9-10 (emphasis modified).)

Defendants respond that independence from the device hardware and operating system is a critical limitation that is confirmed by the specification. (Dkt. No. 70 at 12-18.) Defendants also cite deposition testimony of the named inventor, Ian Charles Ogilvy, regarding application independence. (*See id.* at 13-14 & 18.) Further, Defendants cite extrinsic journal articles, as well as decisions by the Court of Appeals for the Federal Circuit, as evidence that “[a]t the time of patent filing, VMs were tightly associated with the ability to run applications independent of platforms.” (*Id.* at 14.) Finally, Defendants cite prosecution history in which, Defendants argue: “[Plaintiff’s] position was that its software does everything that the Java VM does and more. . . .

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<sup>2</sup> For “virtual machine means” and “virtual function processor,” the Court reached the same construction in *Gores* as in *VeriFone*. *VeriFone* at 14 & 20; *Gores* at 11 & 17. For “virtual message processor,” the parties in *Gores* agreed upon a construction that differed only slightly from the Court’s construction in *VeriFone*. *Compare VeriFone* at 19 with *Gores* at 12 & 46.

All agreed that it processed generic-language Java instructions—instructions that ‘are not hardware specific.’ \* \* \* CardSoft’s VM thus has all of the attributes of the Java VM and a critical, distinguishing addition, the ‘virtual message processor.’” (*Id.* at 17.) Defendants argue that Plaintiff here takes a contrary position that “would encompass even systems requiring absolute one-to-one customization of application to platform.” (*Id.* at 18.)

Plaintiff replies that Defendants’ “mischaracterized extrinsic evidence cannot trump the clear and unequivocal definition of ‘virtual machine’ set forth in the specification and asserted claims of the patents-in-suit.” (Dkt. No. 74 at 3.) As to the prosecution history, Plaintiff argues that “[m]erely because [Plaintiff] emphasized [the virtual message processor] as being a basis for patentability does not mean, nor should be interpreted as, [Plaintiff] admitting that the claimed invention was otherwise identical to a Java Virtual Machine.” (*Id.* at 5.)

At the June 10, 2014 hearing, Defendants argued that Plaintiff’s proposed constructions require the mere *existence* of a virtual machine with no requirement that the virtual machine is actually used. Plaintiff responded by reiterating that although the purpose of the virtual machine is to facilitate portability, the claims do not require that applications are portable. Plaintiff also argued claim differentiation as to Claim 7. Finally, Plaintiff urged that the meaning of “independent” in Defendants’ proposed constructions is unclear.

## (2) Analysis

Claim 1 of the ‘945 Patent is representative and recites (emphasis added):

1. A communication device which is arranged to process messages for communications, comprising a *virtual machine means* which includes  
    a *virtual function processor* and function processor instructions for controlling operation of the device, and  
    message induction [*sic*, instruction] means including a set of descriptions of message data;  
    a *virtual message processor*, which is arranged to be called by the *function processor* and which is arranged to carry out the message handling tasks of

assembling the messages, disassembling messages and comparing the messages under the direction of the message instruction means that is arranged to provide directions for operation of the *virtual message processor*, whereby when a message is required to be handled by the communications device the *message processor* is called to carry out the message handling task, wherein the *virtual machine means* is emulatable in different computers having incompatible hardwares or operating systems.

Plaintiff has argued claim differentiation as to Claim 7 of the '945 Patent, which recites:

7. A device in accordance with claim 1, wherein the message processor instruction means is implemented in software defined by the message processor, wherein the device includes a microprocessor, and wherein the message instruction means do not require translation to the native software code of the microprocessor.

Claim 7 adds multiple limitations to what is recited in Claim 1, such as that “the device includes a microprocessor.” Plaintiff’s claim differentiation argument is therefore of limited weight. *See Wenger Mfg., Inc. v. Coating Mach. Sys., Inc.*, 239 F.3d 1225, 1233 (Fed. Cir. 2001) (“Claim differentiation, while often argued to be controlling when it does not apply, is clearly applicable when there is a dispute over whether a limitation found in a dependent claim should be read into an independent claim, *and that limitation is the only meaningful difference between the two claims.*”) (emphasis added).

As to the other intrinsic evidence, the specification discloses that a virtual machine can facilitate “portability” of programs:

In conventional devices, each time a message is constructed or deconstructed, the operation of the machine will be handled by the application program. To change operation of the machine, the application must be changed. This is laborious, and gives rise to problems, as discussed above.

The technique of creating a virtual processor (or in this case microprocessor) is well known and referred to as an interpreter. *This allows programs to operate independent of processor.* With the newer technique of also creating virtual peripherals then the whole is referred to as a “virtual machine”.

A virtual machine is computer programmed to emulate a hypothetical computer. Different incompatible computers may be programmed to emulate the same

hypothetical computer. *Any computer programmed to emulate the hypothetical computer will thus be capable of executing programs for the virtual computer.* This creates a complete *portable* environment for program operations.

‘945 Patent at 3:29-46 (emphasis added).

The message processor means is preferably translated into the native code of the microprocessor in each hardware device on which the virtual machine is to be implemented. The message processor instructions are preferably *virtual instructions* to be expressed only in the language defined by the message processor means- and thus never requiring translation to any real hardware processor.

\* \* \*

In a preferred embodiment, therefore, a device in accordance with the present invention includes a virtual machine including virtual processors which are specifically arranged to control message construction, deconstruction, [and] comparison and to control the communication of information, both for reception from a network and transmission to a network. These operations can therefore be carried out at speed, overcoming the problems with known virtual machines and interpreters, which tend to operate slower than conventionally programmed devices. The virtual machine therefore lends itself particularly to applications relating to communications, such as payment terminal devices and other devices in which message processing and communication comprise a significant proportion of the operation of the device. . . . The virtual machine can be implemented on any hardware, BIOS/OS arrangement and therefore *facilitates portability of programs.*

Implementation of such a virtual machine on payment terminal devices of different brands enables operation of the payment terminal devices or brands to be altered merely by altering application commands generic to all brands. *Each brand is seen by the application as the same virtual machine.*

*Id.* at 4:5-11 & 4:51-5:8 (emphasis added); *see also id.* at 4:31-37 (“The protocol processor instructions are virtual instructions . . .”).

## Program Portability

### Portable Programs

CardScript<sup>3</sup> allows the writing of totally portable programs[;] it is also possible to write programs that are not very portable. Any CardScript program will “execute” on any CardScript enabled target, however the result could be of no use on the target if special hardware characteristics are required for practical operation of the program. CardScript provides a mechanism for avoiding the traps and keeping programs portable whilst still taking advantage of special hardware when available.

*Id.* at 22:21-31.

During prosecution, Plaintiff explained that the claimed invention is different from the well-known “Java Virtual Machine”:

One important feature of the Java language is that it can be interpreted by a Java Virtual Machine. *Different versions of Java Virtual Machine are produced to interface with different underlying processors and operating systems.* Thus, a program written in Java language may run on a variety of computers each having incompatible hardware or operating systems, and each running a Java Virtual Machine. Similar aspects of this type of a virtual machine has [*sic*, have] been described in the Specification . . . .

[T]he communication device as described and presently claimed is quite significantly different from the Java Virtual Machine of Stern [(United States Patent No. 5,935,249)], because the presently claimed invention includes a *dedicated virtual message processor*, which function is to [*sic*] perform *generic handling of messages*.

Dkt. No. 70, Ex. D, 10/14/2004 Amendment Under 37 CFR 1.111 at 12 (emphasis modified).

As discussed in the Specification . . . , a virtual machine is a computer, which is programmed to emulate a hypothetical computer. This means that different incompatible computers (incompatible hardware and operating systems) may be programmed to emulate the same hypothetical computer. *Applications may then be written for the hypothetical computer, which are therefore portable to the previously incompatible computers.*

*Id.*, Ex. B, 11/18/2002 Response at 3 (emphasis added).

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<sup>3</sup> Defendants submit that “CardScript” was “[t]he once-commercial embodiment of the invention.” Dkt. No. 70 at 15.

Nowhere, however, did the patentee definitively state that all virtual machine applications must be portable or that a virtual machine can run only portable applications. *See Omega Eng'g v. Raytek Corp.*, 334 F.3d 1314, 1324 (Fed. Cir. 2003) (“As a basic principle of claim interpretation, prosecution disclaimer promotes the public notice function of the intrinsic evidence and protects the public’s reliance on *definitive* statements made during prosecution.”) (emphasis added). For example, applications that can be executed on a virtual machine installed on a particular device might not operate, or at least not operate properly, when executed on the same virtual machine on a different device. *See* ‘945 Patent at 22:21-31 (quoted above).

As to extrinsic evidence, Defendants have cited a definition of “virtual machine” as: “Software that mimics the performance of a hardware device, such as a program that allows applications written for an Intel processor to be run on a Motorola chip.” (Dkt. No. 70, Ex. J, *Microsoft Press Computer Dictionary* 498 (3d ed. 1997).) As Defendants have also submitted, the Court of Appeals for the Federal Circuit has noted that Java applications are not “processor-specific.” *Nazomi Commc’ns, Inc. v. Nokia Corp.*, 739 F.3d 1339, 1340 (Fed. Cir. 2014). Further, Defendants have cited CardScript documents stating that: “[t]he main benefits of using CardScript are: \* \* \* Hardware independence - the same application can run on a variety of terminals”; and the “Magic” of CardScript is that it “run[s] the same application program on terminals with different hardware architectures and even different microprocessors.” (Dkt. No. 70, Ex. K, *An Overview of CardScript* at FDCCS00005046 & FDCCS00005053.)

Defendants have also cited deposition testimony in which Mr. Ogilvy agreed that “the application is independent software-wise from the underlying code of the individual machines.” (Dkt. No. 70, Ex. G, 5/2/2011 Ogilvy dep. at 163:6-9.) First, inventor testimony is of limited relevance during claim construction. *See Howmedica Osteonics Corp. v. Wright Med. Tech.*,

*Inc.*, 540 F.3d 1337, 1346-47 (Fed. Cir. 2008). Second, nothing in the cited testimony is inconsistent with Plaintiff's position that the disputed terms do *not* demand that "once an application program is written and compiled for a particular device, every single ePOS device in the world must be able to execute that same application without any modification whatsoever." (Dkt. No. 74 at 1.)

On balance, Defendants' proposal that applications must be "independent" of the device hardware and operating system is too narrow. For example, application performance and capabilities may vary depending upon the hardware and operating system. *See* '945 Patent at 22:21-31 (quoted above). Also, as the Court noted in *Gores*, "portability or non-portability of applications is not a limitation of the virtual machine that executes the applications." *Gores* at 11. Instead, "portability of applications is merely a desired result of using a virtual machine." *Id.*; *see* '945 Patent at 3:29-46 ("Any computer programmed to emulate the hypothetical computer will thus be capable of executing programs for the virtual computer.").

Finally, as Plaintiff has argued, Defendants' concern that Plaintiff's proposed constructions "would encompass even systems requiring absolute one-to-one customization of application to platform" (Dkt. No. 70 at 18) is addressed by the separate claim limitation that "the virtual machine means is emulatable in different computers having incompatible hardwares or operating systems." More specifically, because the parties agree that the "virtual machine means" term requires emulating a "hypothetical computer" for running applications, the "virtual machine means" and "emulatable . . ." limitations together require that applications run on the *same* "hypothetical computer" emulated on *different* computers. Such a reading is consistent with the above-quoted intrinsic evidence. *See* '945 Patent at 3:41-43 ("Different incompatible



computers may be programmed to emulate the same hypothetical computer.”); *see also* Dkt. No. 70, Ex. B, 11/18/2002 Response at 3 (similar).

Defendants’ proposed constructions are therefore hereby expressly rejected, and the Court reaches the same constructions here as in *Gores*. The Court accordingly hereby construes the disputed terms as set forth in the following chart:

<u>Term</u>	<u>Construction</u>
“virtual machine means”	“a computer programmed to emulate a hypothetical computer for applications relating to transport of data”
“virtual function processor”	“software which controls and/or selects general operations of a communication device”
“virtual message processor”	“software implemented in the native code of the communications device that processes messages, including assembling, disassembling, and comparing messages, for communication to and/or from a communications device”

**B. “message instruction means”**

<b>Plaintiff’s Proposed Construction</b>	<b>Defendants’ Proposed Construction</b>
<p>Function:  “providing directions for operation of the virtual message processor”</p> <p>Corresponding Structure:  “13:29-14:2; 15:23-34; Figure 11 and Figure 8, and equivalents thereof”</p>	<p>Function:  “providing directions for operation of the virtual message processor”</p> <p>Corresponding Structure:  “from the ‘945 patent, 4:8-11; 13:29-14:2; 14:37-40; 15:23-34[;] Figure 11 and Figure 8, and equivalents thereof”</p>

(Dkt. No. 65 at 10; Dkt. No. 70 at 19.)

(1) The Parties' Positions

Plaintiff argues that Defendants' attempt to limit this term to the "[m]essage instructions . . . be[ing] translated into code readable by the virtual machine" ('945 Patent at 14:37-40) "thus never requiring translation to any real hardware processor" (*id.* at 4:8-11) would improperly "restrict the claimed 'message instruction means' by limiting it to the preferred embodiment covered by [dependent] claim 7 of the '945 patent." (Dkt. No. 65 at 10.)

Defendants respond that the corresponding structure should be such that "the application need only be translated once, into the language of the VM," so as to "be true to this critical aspect of [Mr.] Ogilvy's invention and the quoted specification support." (Dkt. No. 70 at 19.) Defendants also cite deposition testimony of Mr. Ogilvy. (*See* Dkt. No. 70, Ex. G, 5/2/2011 Ogilvy dep. at 180:16-25 (agreeing that the "message processor instructions," which are the "application component," "never require[e] translation to any real hardware processor"; noting that "the message processor means is the virtual machine engine component and the instructions for it are the application component"); *see also id.* at 156:18-22 ("Q. \* \* \* Under your approach, your virtual machine approach, none of your software would be compiled into the code that would otherwise reside in the processor; is that correct? A. None of the application software would be."); *id.* at 157:2-22 ("Q. The applications are not compiled into the native code? A. That's right, yes."); *id.* at 159:20-23 ("A. \* \* \* So you port the virtual machine once for [a] brand and model, and then every application that exists on any of those machines made to that specification can be run.")).

Plaintiff replies that Defendants have cited disclosure that pertains to Figure 2, which "relates to an embodiment of the invention that includes *three* different processors, not the two called for by the asserted claims." (Dkt. No. 74 at 6.) Plaintiff concludes that "Figure 2

therefore relates to a particular embodiment of narrower scope than the embodiment covered by claim 1 and so does not support Defendants' proposed addition to this Court's prior claim construction." (*Id.*)

At the June 10, 2014 hearing, Defendants argued that Plaintiff's proposed construction would allow for hardware-specific or operating-system-specific message instructions, which Defendants submitted would read out the requirement of a virtual machine. Plaintiff responded that the passages proposed by Defendants are not linked to the claimed function.

## (2) Analysis

The parties agree that "message instruction means" is a means-plus-function term governed by 35 U.S.C. § 112, ¶ 6. (Dkt. No. 75, Ex. A, 5/27/2014 Claim Construction Chart per Local Rule 4-5(d) at 5 n.2.)

Title 35 U.S.C. § 112, ¶ 6 provides: "An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." Further, "[t]he scope of a claim under [35 U.S.C.] section 112, paragraph 6 . . . must be limited to structures *clearly linked or associated* with the claimed function in the specification or prosecution history and equivalents of those structures." *Med. Instrumentation & Diagnostics Corp. v. Elekta AB*, 344 F.3d 1205, 1219 (Fed. Cir. 2003) (emphasis added). "Although patentees are not necessarily limited to their preferred embodiment . . . interpretation of a means-plus-function element requires this court to consult the structure disclosed in the specification, which often . . . describes little more than the preferred embodiment." *Signtech USA, Ltd. v. Vutek, Inc.*, 174 F.3d 1352, 1356 (Fed. Cir. 1999).

Claim 1 of the '945 Patent is representative and recites (emphasis added):

1. A communication device which is arranged to process messages for communications, comprising a virtual machine means which includes  
a virtual function processor and function processor instructions for controlling operation of the device, and  
*message in[struction] means including a set of descriptions of message data;*  
a virtual message processor, which is arranged to be called by the function processor and which is arranged to carry out the message handling tasks of assembling the messages, disassembling messages and comparing the messages under the direction of the *message instruction means that is arranged to provide directions for operation of the virtual message processor*, whereby when a message is required to be handled by the communications device the message processor is called to carry out the message handling task,  
wherein the virtual machine means is emulatable in different computers having incompatible hardwares or operating systems.

As to the Court's prior construction, *VeriFone* found that "message instruction means" is a means-plus-function term, and the Court "construe[d] the term . . . as follows: (1) the function is 'providing directions for operation of the virtual message processor;' and (2) the structure is '13:29-14:2; 15:23-34; Figure 11 and Figure 8, and equivalents thereof.'" *VeriFone* at 24. In *Gores*, the parties agreed to substantially this construction. *See Gores* at 46.

The parties here agree upon including the structure identified in *VeriFone*; Defendants simply argue that additional structure should be included. The passages cited by the agreed-upon portions of the parties' proposals disclose as follows:

FIG. 11 is a schematic diagram illustrating the structure of the message instruction means 109. The message instruction means is in fact in the form of a set of "descriptions" of the messages. Each message usually comprises a plurality of fields 120, and the message instruction means for each message contains a corresponding plurality of message instructions. One field may be the CUSTOMER NAME, for example. In the message instruction means, each field is associated with a number of message descriptors 121 which designate characteristic [*sic*] to be applied to the information in that field or to be expected of the information in that field. Operations which may be carried out on the data included in that field may also be included in the descriptors 121. As illustrated in the drawing, the descriptors may include:

1. Data Location Identification. This will indicate either where the data is to be found and/or where data is to be put. In the current embodiment the data location information is contained in a two byte field descriptor (thus having 65535 different possible values) with value ranges allocated to

1) 2000 strings

2) literal numeric values from 0 to 32,000 in abbreviated form

3) data field Ids where each ID is represented as an entry in a table, and each table may contain up to 256 fields.

2. Data Representation (i.e. Ascii [*sic*, ASCII], Binary, etc.).

This indicates what representation form the data is in and/or what it is to be converted to.

3. Format. This provides a description of the format that the data is in and/or is to be placed in.

4. Test Function. The index of a function processor set of instructions to determine if the current field is to be included or excluded at this time[.]

5. Line & Column. Relative position for use in constructing messages for display or printing. These values are used to determine the quantity of space characters, and or new line characters that are required in the buffer.

6. Substitution list. A list of text representations to substitute for numeric values e.g., display the value “1” as “Monday” and “2” as “Wednesday”.

7. Additional description options as required by the application or prove useful in future embodiments.

\* \* \*

This embodiment of the present invention includes another class of message instruction means, known as a “Form”. Instead of a Data Representation as a message descriptor, a Form includes description of a Location of the data field in the Form. FIG. 8 is a display provided by a development tool enabling the programmer to prepare message instructions for a Form message. On the left hand side of the display a panel 70 illustrates Form layout. The fields in the Form include MerName, Address Line 1, etc. The location of these fields can be moved within the panel 70. The location in the panel is provided as a descriptor and for the message instruction.

‘945 Patent at 13:29-14:2 & 15:23-34. Figures 8 and 11 are reproduced here:

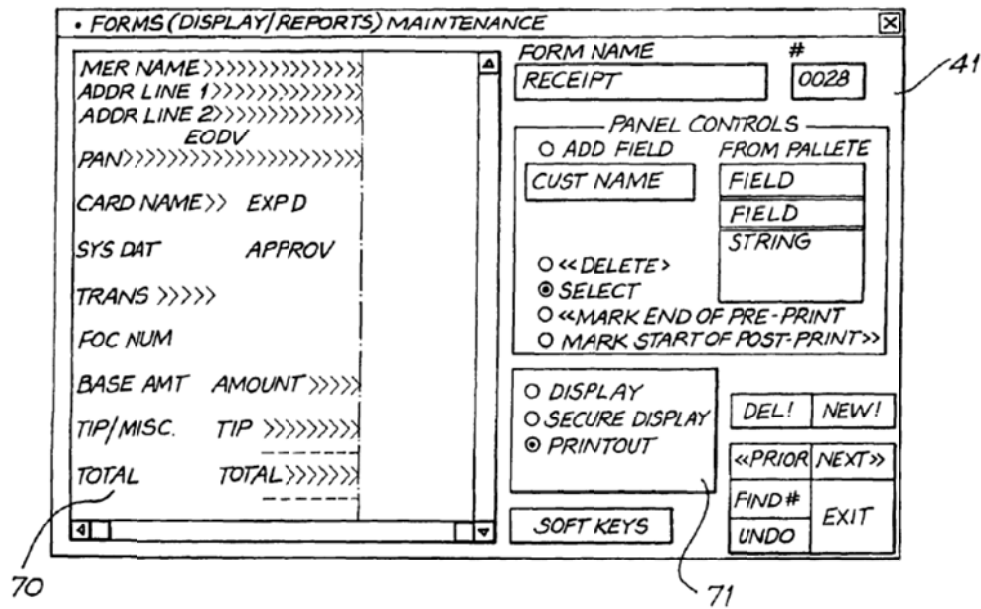


FIG. 8

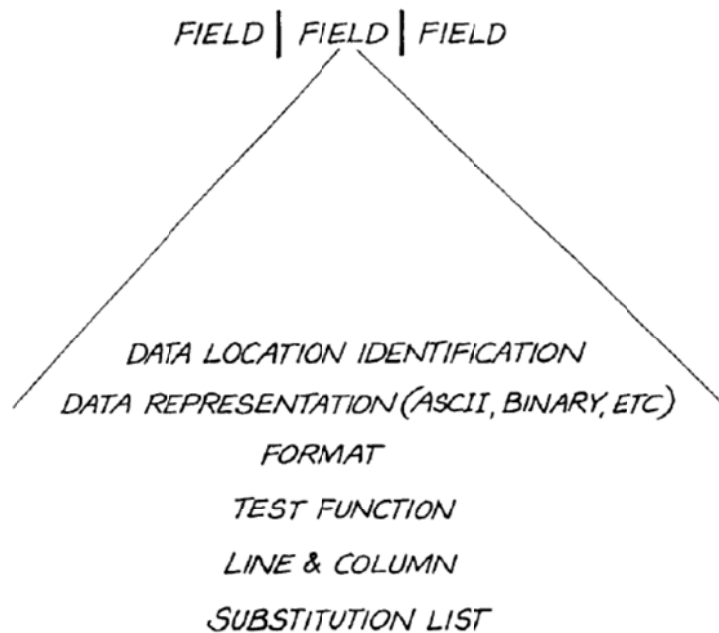


FIG. 11

At the June 10, 2014 hearing, the parties agreed that these figures present alternative types of message instruction means. *See Ishida Co., Ltd. v. Taylor*, 221 F.3d 1310, 1316 (Fed. Cir. 2000) (noting that a patent can “disclose[] alternative structures for accomplishing the claimed function”).

Defendants argue that the corresponding structure must also include disclosure that message instructions are in a virtual machine language:

[The message processor means is preferably translated into the native code of the microprocessor in each hardware device on which the virtual machine is to be implemented.] The message processor instructions are preferably virtual instructions to be expressed only in the language defined by the message processor means- and thus never requiring translation to any real hardware processor.

\* \* \*

[A development tool for developing the application 104, in particular the message and protocol instructions 108, 109 comprises a graphical user interface based program which may be run on a PC or other general purpose computer. The program provides a graphical user interface based framework which enables message instructions to be built from data input by a programmer.] Message instructions can subsequently be translated into code readable by the virtual machine 102, 101, 103 and downloaded into the application device.

’945 Patent at 4:5-11 & 14:31-40 (square bracketed passages added to provide context for the passages proposed by Defendants).

Plaintiff has argued that these passages proposed by Defendants are not sufficiently linked to the claimed function of providing directions for operation of the virtual message processor. *See Med. Instrumentation*, 344 F.3d at 1219 (“The scope of a claim under [35 U.S.C.] section 112, paragraph 6 . . . must be limited to structures *clearly linked or associated* with the claimed function in the specification or prosecution history and equivalents of those structures.”) (emphasis added).

The first of the above-quoted passages refers to “[t]he message processor means” as well as to “message processor instructions.” ‘945 Patent at 4:5 & 4:8. The second of the above-quoted passages refers to “message instructions to be built from data input by a programmer.” *Id.* at 14:36-37. The connection between these passages and the claimed function of “providing directions for operation of the virtual message processor” is self-evident. Also, the specification provides additional linkage by disclosing that message instructions are part of the “application 104” that is developed with the “development tool” disclosed in the second of the above-quoted passages proposed by Defendants. *See* ‘945 Patent at 10:40-42; *see also id.* at 6:47-49 (“The message instructions are preferably subsequently converted to code and downloaded into the device which is to employ them with the virtual machine.”). Thus, on balance, the passages proposed by Defendants are sufficiently linked to the claimed function. *See Med. Instrumentation & Diagnostics*, 344 F.3d at 1219.

Finally, Plaintiff has argued claim differentiation as to Claim 7 of the ‘945 Patent, which recites:

7. A device in accordance with claim 1, wherein the message processor instruction means is implemented in software defined by the message processor, wherein the device includes a microprocessor, and wherein the message instruction means do not require translation to the native software code of the microprocessor.

Claim 7 adds multiple limitations to what is recited in Claim 1, such as that “the device includes a microprocessor.” Plaintiff’s claim differentiation argument is therefore of limited weight. *See Wenger*, 239 F.3d at 1233 (“Claim differentiation, while often argued to be controlling when it does not apply, is clearly applicable when there is a dispute over whether a limitation found in a dependent claim should be read into an independent claim, *and that limitation is the only meaningful difference between the two claims.*”) (emphasis added).



Moreover, patentees are not permitted to expand the scope of a means-plus-function term by reciting corresponding structure in a dependent claim. *Laitram Corp. v. Rexnord, Inc.*, 939 F.2d 1533, 1538 (Fed. Cir. 1991) (“A means-plus-function limitation is not made open-ended by the presence of another claim specifically claiming the disclosed structure which underlies the means clause or an equivalent of that structure. If [plaintiff’s] argument were adopted, it would provide a convenient way of avoiding the express mandate of [35 U.S.C.] section 112(6).”); *accord ICON Health & Fitness, Inc. v. Octane Fitness, LLC*, No. 2011-1521, -1636, 496 F. App’x 57, 63 (Fed. Cir. Oct. 24, 2012), *rev’d on other grounds sub nom. Octane Fitness, LLC v. ICON Health & Fitness, Inc.*, 134 S. Ct. 1749 (2014).

The Court accordingly hereby finds that for the **“message instruction means,”** the function is **“providing directions for operation of the virtual message processor”** and the corresponding structure is **“(1) Figure 8, 4:8-11, 14:37-40, and 15:23-34 of the ‘945 Patent, and equivalents thereof; or (2) Figure 11, 4:8-11, 13:29-42, and 14:37-40 of the ‘945 Patent, and equivalents thereof.”**

**C. “emulatable in different computers having incompatible hardwares or operating systems”**

<b>Plaintiff’s Proposed Construction</b>	<b>Defendants’ Proposed Construction</b>
“capable of executing programs on different computers having incompatible hardware or operating systems”	“capable of running unmodified applications on different computers having incompatible hardware or operating systems”

Dkt. No. 65 at 11; Dkt. No. 70 at 21.

(1) The Parties’ Positions

Plaintiff argues that Defendants’ proposal of “unmodified applications” “is nothing more than another attempt to re-introduce the same ‘portability’ and ‘not compiled’ limitations that this Court properly rejected in *CardSoft I* [(VeriFone)] and *CardSoft II* [(Gores)].” (Dkt. No. 65

at 10.) Plaintiff argues that its proposed construction should be adopted for the reasons set forth by the Court in *VeriFone*. (*Id.* (citing *VeriFone* at 14-17).)

Defendants respond that “[i]t may be immaterial that a terminal can also run customized applications, but the VM must be able to run unmodified applications across multiple hardware/OS platforms.” (Dkt. No. 70 at 21.) Defendants cite deposition testimony of Mr. Ogilvy that “it is his VM that must be ‘modified to run on different terminals with different microprocessors,’ not ‘the applications.’” (*Id.* at 22 (citing *id.*, Ex. G, 5/2/2011 Ogilvy dep. at 161:7-14 (quoted below))).)

Plaintiff replies that “just as with [Defendants’ proposed] ‘application independence’ requirement, there is no good reason to introduce Defendants[’] ‘unmodified applications’ requirement to this Court’s prior construction of the ‘emulatable’ limitation.” (Dkt. No. 74 at 7.) Plaintiff also reiterates that Defendants’ citation of deposition testimony of the named inventor “cannot trump the intrinsic evidence, particularly the common specification of the patents-in-suit.” (*Id.*)

At the June 10, 2014 hearing, Defendants submitted that although Plaintiff’s proposal of the words “executing” and “programs” is acceptable, the construction should clarify that the programs are “unmodified.” Otherwise, Defendants argued, if the programs are customized for each device then there is no advantage to having a virtual machine.

## (2) Analysis

In *VeriFone* and *Gores*, the Court construed the disputed term to mean “capable of executing programs on different computers having incompatible hardware or operating systems.” *VeriFone* at 17; *Gores* at 26.

Claim 1 of the ‘945 Patent is representative and recites, in relevant part (emphasis added):

1. A communication device which is arranged to process messages for communications, comprising a *virtual machine means* which includes  
a virtual function processor and function processor instructions for controlling operation of the device, and  
message induction [*sic*, instruction] means including a set of descriptions of message data;  
a virtual message processor, which is arranged to be called by the function processor and which is arranged to carry out the message handling tasks . . . ,  
*wherein the virtual machine means is emulatable in different computers having incompatible hardwares or operating systems.*

For much the same reasons as for Defendants’ proposal of “independent” for the terms “virtual machine means,” “virtual function processor,” and “virtual message processor” (addressed above), Defendants’ proposal of “unmodified” is too narrow. *See* ‘945 Patent at 22:21-31 (quoted above); *see also Gores* at 11. Instead, the disputed term merely requires that the virtual machine can run programs on otherwise incompatible hardware or operating systems. *See id.* (“Nothing in the claims, the specification, or the prosecution history requires that *all* applications written for a virtual machine must be ‘portable.’”) (emphasis added).

Thus, although running applications without modification is desirable, the specification contains no definitive statement that would warrant importing such a limitation into the claims. *See E-Pass Techs., Inc. v. 3Com Corp.*, 343 F.3d 1364, 1370 (Fed. Cir. 2003) (“The court’s task is not to limit claim language to exclude particular devices because they do not serve a perceived ‘purpose’ of the invention. . . . An invention may possess a number of advantages or purposes, and there is no requirement that every claim directed to that invention be limited to encompass all of them.”) (footnote omitted); *see also Howmedica*, 540 F.3d at 1345 (discussing *E-Pass*).

As to extrinsic evidence, Defendants have cited deposition testimony of Mr. Ogilvy that applications can run on different terminals without modification:

Q. Did you understand, Mr[.] Ogilvy, that if the virtual machine is modified to run on different terminals with different microprocessors with different native codes, you no longer have the same virtual machine code; correct?

A. The code has to be modified, yes.

Q. Yes, but the applications do not?

A. That is correct.

(Dkt. No. 70, Ex. G, 5/2/2011 Ogilvy dep. at 161:7-14); *see id.* at 162:19-20 (“the application instructions are not modified to reflect th[e] underlying structure”). First, inventor testimony is of limited relevance during claim construction. *See Howmedica*, 540 F.3d at 1346-47. Second, nothing in the cited testimony is inconsistent with Plaintiff’s position that the disputed terms do *not* demand that “once an application program is written and compiled for a particular device, every single ePOS device in the world must be able to execute that same application without any modification whatsoever.” (Dkt. No. 74 at 1.)

The Court therefore rejects Defendants’ proposal of “running unmodified applications” and accordingly hereby construes “**emulatable in different computers having incompatible hardwares or operating systems**” to mean “**capable of executing programs on different computers having incompatible hardware or operating systems.**”

## **CONCLUSION**

The Court adopts the constructions set forth in this opinion for the disputed terms of the patents-in-suit.

The parties are ordered that they may not refer, directly or indirectly, to each other's claim construction positions in the presence of the jury. Likewise, the parties are ordered to refrain from mentioning any portion of this opinion, other than the actual definitions adopted by the Court, in the presence of the jury. Any reference to claim construction proceedings is limited to informing the jury of the definitions adopted by the Court.

**SIGNED this 24th day of June, 2014.**

  
\_\_\_\_\_  
ROY S. PAYNE  
UNITED STATES MAGISTRATE JUDGE

## APPENDIX A

<u>Term</u>	<u>Parties' Agreement</u>
“function processor instructions”  (‘945 Patent, Claims 1, 12 & 14; ‘683 Patent, Claim 1)	“a set of instructions that control operation of the communications device”

(Dkt. No. 51 at 1-2.)